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11 October 2000

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JC917 U.S. PTO
09/685138
10/11/00

Assistant Commissioner for Patents
Washington, D.C. 20231

Attorney Docket: P56181

Sir:

Submitted herewith is the following patent application:

Inventor: **1) JU-HEON LEE**

Title: **PORTABLE INTEGRATED CIRCUIT MEMORY DEVICE FOR USE WITH UNIVERSAL SERIAL BUS**

Please find attached hereto an application for patent which includes: Specification and Abstract, Claims, original Declaration And Power of Attorney, Assignment, and a certified copy of the foreign priority document identified below:

Verified Showing of Small Entity Status: **NO**

Drawings: Formal drawings, 8 sheets, Figures 1 through 7

Claim of priority under 35 U.S.C. §119: **YES**

** The Republic Of Korea Application No. 43872/1999 filed on 11 October 1999.

FEE (see formula below): **CHECKS ARE ENCLOSED** CK#37502 ($710.00) & #37503 ($40.00)

Basic Fee $355/710	$710.00
Additional Fees:	
Total number of claims in excess of 20: ___times $9/18 .	$0.00
Number of independent claims in excess of 3: __times $40/80	$0.00
Multiple Dependent Claims $135/270	$0.00
An Assignment is likewise enclosed: Recording Fee $40 . .	$40.00
Filing Non-English specification	$0.00
TOTAL FEES FOR THE ABOVE APPLICATION	***$750.00***

JC772 U.S. PTO 10/11/00

PTO/SB/17 (08-00)
Approved for use through 9/30/2000. OMB 0651-0032
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JC817 U.S. PTO 09/685138 10/11/00

FEE TRANSMITTAL

Patent fees are subject to annual revision.

Complete If Known	
Application Number	*to be assigned*
Filing Date	11 October 2000
First Named Inventor	JU-HEON LEE
Examiner Name	*to be assigned*
Group/Art Unit	*to be assigned*
Attorney Docket No.	P56181

TOTAL AMOUNT OF PAYMENT	($) 750.00

METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number: 02-4943
Deposit Account Number: _____

☐ Charge Any Additional Fee Required Under 37 C.F.R. §1.16 and 1.17.

☐ Applicant claims small entity status. See 37 CFR 1.27

2. ■ **Payment Enclosed: (CHECK #37502 & 37503)**

■ Check ☐ Credit Card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	$710
106	320	206	160	Design filing fee	$
107	490	207	245	Plant filing fee	$
108	710	208	355	Reissue filing fee	$
114	150	214	75	Provisional filing fee	$
SUBTOTAL (1)					($) ~~$710.~~ 00

2. EXTRA CLAIM FEES

			Extra Claims		Fee from below		Fee Paid
Total claims	20	-20** =	0	x	18	=	0
Independent Claims	3	- 3** =	0	x	80	=	0
Multiple Dependent						=	

** or number previously paid, if greater; For Reissues, see below

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	80	202	40	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	80	209	40	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge-late filing fee or oath	$
127	50	227	25	Surcharge-late provisional filing fee or cover sheet	$
139	130	139	130	Non-English specification	$
147	2,520	147	2,520	For filing a request for reexamination	$
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	$
113	1,840 *	113	1,840*	Requesting publication of SIR after Examiner action	$
115	110	215	55	Extension for reply within first month	$
116	390	216	195	Extension for reply within second month	$
117	890	217	445	Extension for reply within third month	$
118	1,390	218	695	Extension for reply within fourth month	$
128	1,890	228	945	Extension for reply within fifth month	$
119	310	219	155	Notice of Appeal	$
120	310	220	155	Filing a brief in support of an appeal	$
121	270	221	135	Request for oral hearing	$
138	1,510	138	1,510	Petition to institute a public use proceeding	$
140	110	240	55	Petition to revive - unavoidable	$
141	1,240	241	620	Petition to revive - unintentional	$
142	1,240	242	620	Utility issue fee (or reissue)	$
143	440	243	220	Design issue fee	$
144	600	244	300	Plant issue fee	$
122	130	122	130	Petitions to the Commissioner	$
123	50	123	50	Petitions related to provisional applications	$
126	240	126	240	Submission of Information Disclosure Statement	$
581	40	581	40	Recording each patent assignment per property (Times number of properties)	$40
146	710	246	355	Filing a submission after final rejection (37 C.F.R. §1.129(a))	$
149	710	249	355	For each additional invention to be examined (37 C F.R. §1.129(b))	$
Other Fee (specify) _____					$
Other Fee (specify) _____					$

** Reduced by Basic Filing Fee Paid

SUBTOTAL (3) **$40.00**

SUBMITTED BY

Typed or Printed Name	Robert E. Bushnell, Esq.	Reg. Number	27,774
Signature	*Robert E. Bushnell*	Date: 11 October 2000	Deposit Account User ID:

REB/nah

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JC917 U.S. PTO
09/685138
10/11/00

Docket No.: P56181

Inventor: **1) JU-HEON LEE**

Title: **PORTABLE INTEGRATED CIRCUIT MEMORY DEVICE FOR USE WITH UNIVERSAL SERIAL BUS**

Assistant Commissioner is authorized to charge our Deposit Account No. 02-4943 for any **additional charges** necessary towards payment of the filing fee for the above-referenced application. Please notify the undersigned attorney of any transaction regarding our Deposit Account.

In view of the above, it is requested that this application be accorded a filing date pursuant to 37 CFR 1.53(b).

Please address all correspondence to:

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1522 K Street, N.W.
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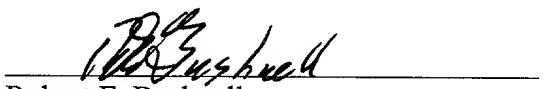
Washington, D.C. 20005-1202

Respectfully submitted,



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REB/nah

TITLE

PORTABLE INTEGRATED CIRCUIT MEMORY DEVICE FOR USE WITH UNIVERSAL SERIAL BUS

CLAIM OF PRIORITY

This application makes reference to, incorporates the same herein, and claims all benefits accruing under 35 U.S.C. §119 from my application *MEMORY STICK FOR UNIVERSAL SERIAL BUS* filed with the Korean Industrial Property Office on October 11, 1999 and there duly assigned Serial No. 43872/1999.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to an auxiliary memory device for use with a personal computer, and more particularly to a portable integrated circuit memory device capable of being used with a universal serial bus (USB).

Description of the Related Art

In the field of personal computers (PCs) and accessories, there has been rapid performance improvements in processors and memories. However, peripheral devices, such as keyboards, mouses, monitors, printers, speakers, microphones, and telephone/fax modems, remained largely unchanged during this period.

In an earlier PC arrangement, if peripherals must be connected to a computer, the sheer number of cables makes the connection between the computer and the peripherals complicated. Also, since such a computer is not always provided with a Plug-and-Play function, it is difficult for a PC user to connect peripheral devices to the computer. Furthermore, if an unskilled user strives to install expansion cards, he may be faced with a complex and bewildering collection of dip switches, circuit boards, jumper cables, peripheral drivers, interrupt request (IRQ) settings, DMA channels and I/O addresses that must be configured. To make matters worse, expanding PC functionality will often result in system crashes, thereby causing the economic loss and inconvenience to the user.

Universal serial bus (USB) system has been developed as one way to avoid some of the above difficulties. USB brings Plug-and-Play technology to the external input and output devices found on today's high-performance PCs or workstations. USB has three major advanced features as follows: (1) ease of use through hot plugging and automatic configuration, (2) standardized connection points and simplified connector design, and (3) simple expansion through the use of a tiered-star hub topology.

With USB, PC users no longer need to worry about selecting the right serial port, installing expansion cards, or the technical headaches of dip switches, jumpers, software drivers, IRQ settings, DMA channels and I/O addresses. USB allows simultaneously attaching and using of multiple devices on the same bus. USB also allows these devices to be attached and removed while a computer system is running and without requiring a reboot to use a newly attached device.

Unlike conventional PCMCIA (personal computer card international association) cards or other add-on cards, since USB does not require the investment in expansion cards, the net cost of

implementing new peripheral products can be substantially lower. Also, the universal compatibility of USB eliminates much of the cost of testing and validation of varying PC-peripheral-software combinations, while accelerating time-to-market. Thus, USB will clearly continue to be used as a computer peripheral interface for the time being, along with other advanced general-purpose buses such as FW (Fire Wire; sometimes called IEEE1394) bus and SSA (Serial Storage Architecture) bus.

What is needed is a portable memory device having a USB interface that can be attached to a USB port on a host computer, allowing a user of the host computer to read and write to the portable memory device. What is also needed is a portable security device that attaches to a USB port of a host computer that allows the user to gain access to the host computer.

SUMMARY OF THE INVENTION

It is an object of the present invention is to provide an integrated circuit memory device capable of being used with a USB-supporting computer.

It is another object of the present invention to provide an integrated circuit memory device that can be used as a portable memory medium such as a floppy disk.

It is still another object of the present invention to provide a portable memory medium having strong immunity to dusts and shocks and having a high data retention reliability.

It is still another object of the present invention to provide an electronic security key device for use in a USB-supporting computer or computer-based system.

It is yet another object of the present invention to provide a portable memory that attaches to a USB port of a host computer, allowing a user to read and write to and from the portable memory.

It is still yet another object of the present invention to provide a security device that attaches to a USB port of a host computer to enable the hard disk drive of the host computer.

According to one aspect of the present invention, there is provided a portable memory device for use with a USB-supporting computer or computer-based system, which includes a nonvolatile integrated circuit portable memory for data storage, a USB connector, a USB interface, coupled between the USB connector and the memory, for interfacing the memory with the computer, and a housing for accommodating the memory and the USB interface. In an embodiment, a portable memory device is shaped like a bar or stick, which has a USB connector on its one end and a hole on the other end. The hole can be used for holding a key ring. Also, a connector cover is provided to protect the USB connector from contamination. In another embodiment, the portable memory device serves as a security key that is used to enable the hard disk drive of a host computer when the portable memory is connected to a USB port of a host computer.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention, and many of the attendant advantages, thereof, will be readily apparent as the same becomes better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings in which like reference symbols indicate the same or similar components, wherein:

Fig. 1A is a perspective view of a portable memory device according to the present invention;

Fig. 1B is a perspective view illustrating a use of the hole of the memory device of Fig. 1A.

Figs. 2A-2C are views showing connector covers of portable memory devices according to

the present invention;

Fig. 3 shows a connection between a USB memory device according to the present invention and a USB-supporting computer;

Figs. 4A-4B are views for explaining the movement of the connector cover of Fig. 3 when the memory device is connected with the computer according to an embodiment of the present invention;

Fig. 5 is a block diagram showing a circuit configuration of a USB memory device according to the present invention;

Fig. 6 is a flowchart showing operation steps of a computer system when a USB memory device is used as a portable memory medium in the computer system according to an embodiment of the present invention; and

Fig. 7 is a flowchart showing operation steps of a computer system when a USB memory device is used as a security key device in the computer system according to an embodiment of the present invention

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DESCRIPTION OF THE PREFERRED EMBODIMENT

Now, the present invention will be described hereinafter more fully with reference to accompanying drawings. If plugged in one of plural USB ports mounted upon a computer system irrespective of kinds of the computer system or its port, a USB memory device is directly recognized in the computer system to conveniently write/read data. The USB memory device is less prone to

data loss caused by dusts or shock. Moreover, a small-sized USB memory device results in its portability.

Fig. 1A is a perspective view of a portable memory device 100 according to the present invention, and Fig. 1B is a perspective view illustrating a use of the hole 90 of the memory device 100 of Fig. 1A. Referring now to Fig. 1A, the portable memory device 100 with a USB connector 40 is an external integrated circuit memory device being capable of substituting a floppy disk drive of a data processing system such as a USB-supporting computer. The memory device 100 can be used as a sub-memory of data processing systems to accommodate peripherals such as a digital camera, a digital video camera, electronic calculator, and so on. The memory device 100 can be shaped like a bar or stick.

Referring to Fig. 1B, the memory device 100 is portable owing to its small size. The memory device 100 comprises a nonvolatile integrated circuit memory and a USB interface within a housing. The housing prevents data loss caused by dust or shock in the memory device 100. The memory device 100 has a USB connector 40 on its one end and a hole 90 on the other end. The hole 90 can be used for holding a key ring. On the USB connector 40, a connector cover is coupled for protecting the USB connector.

Figs. 2A-2C show structures of a connector cover 42 and a housing of the USB memory device 100 shown in Figs. 1A-1B to illustrate insertion and movement of the connector cover 42. In case that the USB connector 40 is uncovered with the connector cover 42, it is likely to be damaged when a user carries the memory device 100. Therefore, the memory device 100 according to the present invention has the connector cover 42 for protecting the USB connector 40 from

damage.

Referring now to Fig. 2A, a housing of the USB memory device 100 comprises one or two concave parts 44 on one or two sides of the housing, and the connector cover 42 comprises one or two convex parts 46 on one or two sides of the connector cover 42. The concave part 44 mates with the convex part 46 and are used for inserting the connector cover 42 into the housing of the USB memory device 100.

Referring now to Fig. 2B, the USB connector cover 42 is inserted to the housing of the USB memory device 100. The connector cover 42 covering the USB connector 40 is capable of moving back and forth along the concave part 44 of the housing.

Referring to Fig. 2C, the USB connector cover 42 moves backward toward hole 90 and away from the USB connector 40 along the concave part 44. For example, if the USB memory device 100 is connected to external devices through the USB connector 40, the cover 42 moves backwards from the USB connector 40 along the concave part 44 of the housing of the USB memory device 100 shown in Fig. 2A or Fig. 2B.

Fig. 3 is a perspective view illustrating a connection between a USB memory device 100 and a USB-supporting computer 10. Referring to Fig. 3, peripheral devices 20 and 100 connected to the USB-supporting computer 10 are powered by the computer 10 without additional power supply device. Since all of the USB devices use USB standard ports, USB devices based on a USB standard can be used in the computer 10 without considering order or location of the USB ports. In addition, the USB devices support a Plug-and-Play function in the computer 10. The USB device can be recognized automatically in the computer 10 or an operation system, without resetting the computer

10. If a USB memory device 100 is connected to one of USB ports 12 and 14 of the computer 10, the memory device 100 is directly recognized as an integrated memory device such as a floppy disk by the Plug-and-Play function. The USB memory device 100 can be used more efficiently in a portable computer having no floppy disk drive.

In addition, the USB memory device 100 can contain security information to perform security function in the computer, such as a hardware key to prevent data access of an unauthorized user. This security function of the USB memory device 100 will be described in detail later.

Figs. 4A-4B are views illustrating movement of the connector cover 42 of the USB memory device 100 of Figs. 2A-2C when the USB memory device 100 is coupled to a portable computer system 10. Referring now to Fig. 4A, a spring 48 is coupled between the concave part 44 of the housing and the connector cover 42 to control movement of the cover 42. When the USB memory device 100 is not connected to any device, the spring 48 is stretched, as shown in Fig. 4A. If the USB memory device 100 is connected to a USB port 14 of the portable computer 10, the cover 42 is pushed along an arrow and the spring 48 is compressed as shown in Fig. 4B. While the USB connector 40 and the USB port 14 are connected to each other, the spring 48 remains compressed. If the USB connector 40 and the USB port 14 are separated from each other, the spring 48 is decompressed, as shown in Fig. 4A, to make the connector cover 42 cover the USB connector 40..

Fig. 5 schematically illustrates architecture of a USB memory device 100. Referring to Fig. 5, a USB memory device 100 comprises a USB connector 40 connected to a USB port of a data processing system, a nonvolatile integrated circuit memory 60 for writing/reading data to/from the data processing system, and a USB interface 50 connected between the USB connector 40 and the

memory 60, for carrying out interface between the data processing system and the memory 60. The memory is composed of a flash memory, such as a flash EEPROM (electrically erasable and programmable read only memory), and so on.

As mentioned above, the USB memory device 100 is recognized as an integrated memory device writing/reading data such as a floppy disk by the Plug-and-Play function. Moreover, the USB memory device 100 can store security and privacy information (e.g., identification number, passport number, etc.) to recognize a user by organizing database of the information. The security information functions as a password, so that the security information is used for verifying an authorized user. Thus, the USB memory device 100 storing the security information can be used as a hardware key to permit that only authorized user access to data stored in a hard disk.

Fig. 6 is a flowchart showing operation steps of a computer system when a USB memory device is used as a portable memory medium such as a floppy disk. Referring now to Fig. 6, at step S10, power is applied to the computer system. At step S12, power on self test (POST) is carried out. In step S14, the USB memory device is recognized by the computer system. In step S16, booting is performed by an operation system (OS). In step S18, data is written/read out to/from the USB memory device.

The operation steps shown in Fig. 6 are described, when the power is applied to the computer system after plugging the USB memory device in the computer system. If the USB memory device is plugged in the computer system while applying the power to the computer system, the memory device is automatically recognized by the Plug-and-Play function.

Fig. 7 illustrates operation steps of a computer system when a USB memory device is used

as security key device such as a hardware key. Referring now to Fig. 7, in step S30, power is applied to the computer system. In step S32, power on self test (POST) is carried out. In step S34, it is determined whether the USB memory device is connected to the computer system. If not connected, the control flow proceeds to step S42 wherein an error message is displayed to insert a USB memory device into the computer system. If connected, the control flow proceeds to next query step S36. At step S36, it is determined whether a security information stored in the USB memory device is matched to a security information stored in the computer system by a microcontroller (not shown) of the computer system. The microcontroller contains a program for comparing the security information from the USB memory device with the security information of the computer system, and verifies an authorized user by the comparing result. If the security information is not correct, the control flow continues to step S42 wherein an error message is displayed to insert a right USB memory device storing reasonable security information into the computer system, and then the flow returns to step S34. If the security information from the USB memory device is matched with the security information of the computer system, the control flow continues to step S38 wherein a hard disk is enabled. In step S40, booting is performed by an operating system (OS). According to the above described operating steps, the USB memory device can be used as a security key device including a security information to control data access of the hard disk.

As a result, the USB memory device according to the present invention can write/read data as an integrated memory circuit after connecting to the USB-supporting computer system irrespective of kinds of the computer system and its ports. In addition, the USB memory device can be used as a security key device storing a security information. Further, the USB memory device is less

dangerous of data loss, and is more portable owing to its small size.

Express Mail Label No. EV 339 920 945 US

WHAT IS CLAIMED IS:

1. A portable memory device for a USB-supporting data processing system, the memory device comprising:

a USB connector for being connected to a USB port of the data processing system;

an integrated circuit memory for writing/reading data; and

a USB interface coupled between the USB connector and the memory, for interfacing the memory with the data processing system.

2. The memory device of Claim 1, wherein the memory is a nonvolatile semiconductor memory.

3. The memory device of Claim 1, wherein the data processing system comprises a computer, a digital camera, a digital video camera, and an electronic calculator.

4. The memory device of Claim 1, wherein the memory device is worked as a portable memory device of the data processing system.

5. The memory device of Claim 1, wherein the memory device supports a plug and play function, and the USB connector is capable of being connected and separated to/from the USB port of the data processing system while the data processing system is powered on.

6. The memory device of Claim 1, wherein the memory device stores a security information.

7. The memory device of Claim 6, wherein the data processing system stores a security information to verify an authorized user.

8. The memory device of Claim 7, wherein the data processing system starts to work when the security information of the memory device is matched with the security information of the data processing system.

9. The memory device of Claim 1, wherein the housing comprises a hole for holding a key ring.

10. The memory device of Claim 1, wherein the memory device comprises a connector cover for protecting the USB connector from damage.

11. The device of claim 1, said device further comprising a housing for accommodating the memory and the USB interface.

12. A method of expanding memory for a host computer, comprising the steps of:

applying power to said host computer;

inserting a portable memory device into a universal serial bus (USB) port of said host computer;

recognizing said portable memory device by said host computer; and

performing reading and writing operations to said portable memory attached to said host computer.

13. The method of claim 12, further comprising the step of performing a power on self test upon applying power to said host computer.

14. The method of claim 12, further comprising the step of booting said host computer by an operating system.

15. The method of claim 12, further comprising the step of automatically sliding a protective cover backwards upon insertion of said portable memory device into said USB port exposing a USB connector of said portable memory.

16. A method for securing data on a hard disk of a host computer, comprising the steps of:

applying power to said host computer;

determining if a universal serial bus (USB) device is connected to said host computer;

comparing security information in said host computer with security information in said USB

device; and

enabling a hard disk drive of said host computer if said security information in said USB device matches said security information in said host computer.

17. The method of claim 16, further comprising the step of performing a power on self test when power is applied to said host computer.

18. The method of claim 16, further comprising the step of booting said host computer by an operating system after enabling said hard disk drive.

19. The method of claim 16, further comprising the step of displaying an error message if said USB device is not connected to said host computer.

20. The method of claim 16, further comprising the step of displaying an error message if said security information in said host computer does not match said security information in said USB device.

ABSTRACT

A portable memory device for use with a USB-supporting computer includes a USB connector, an integrated circuit memory for writing and reading data, and a USB interface, connected between the USB connector and the memory, for interfacing with the computer, and a housing for accommodating the memory and the USB interface. The memory device is used as a portable memory medium such as a floppy disk. The USB memory device is less dangerous of data loss caused by dusts or shock. Additionally, the USB memory device can be used as an electronic security key device of a computer or a computer-based system.

Express Mail Label No. EL 645 [illegible]

Fig. 1A

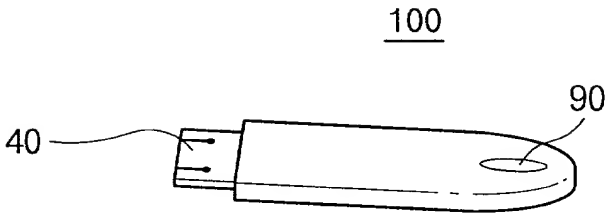


Fig. 1B

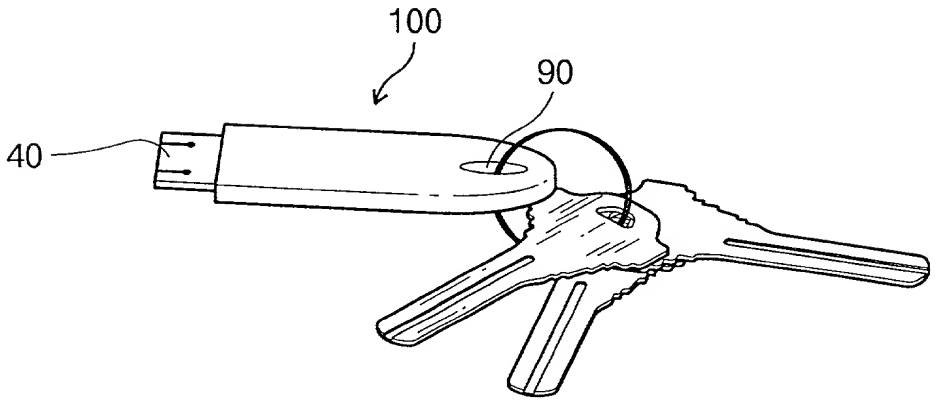


Fig. 2A

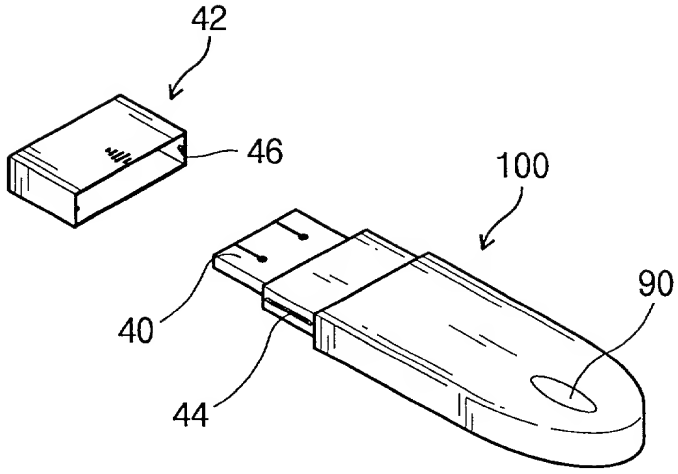


Fig. 2B

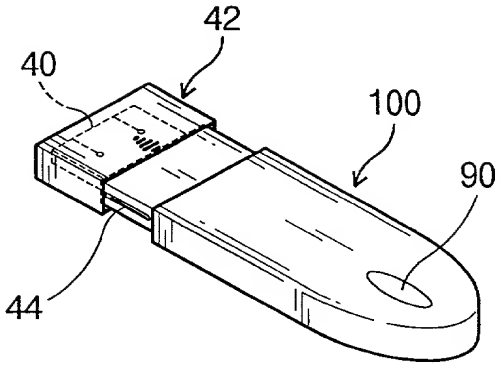


Fig. 2C

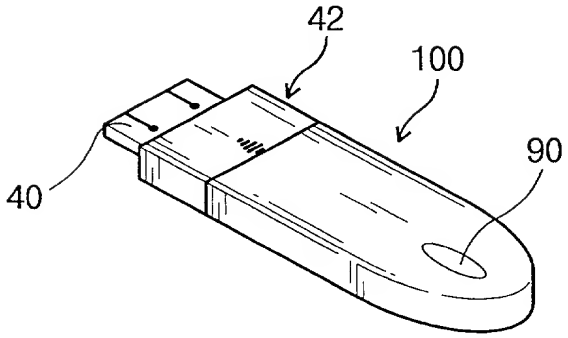


Fig. 3

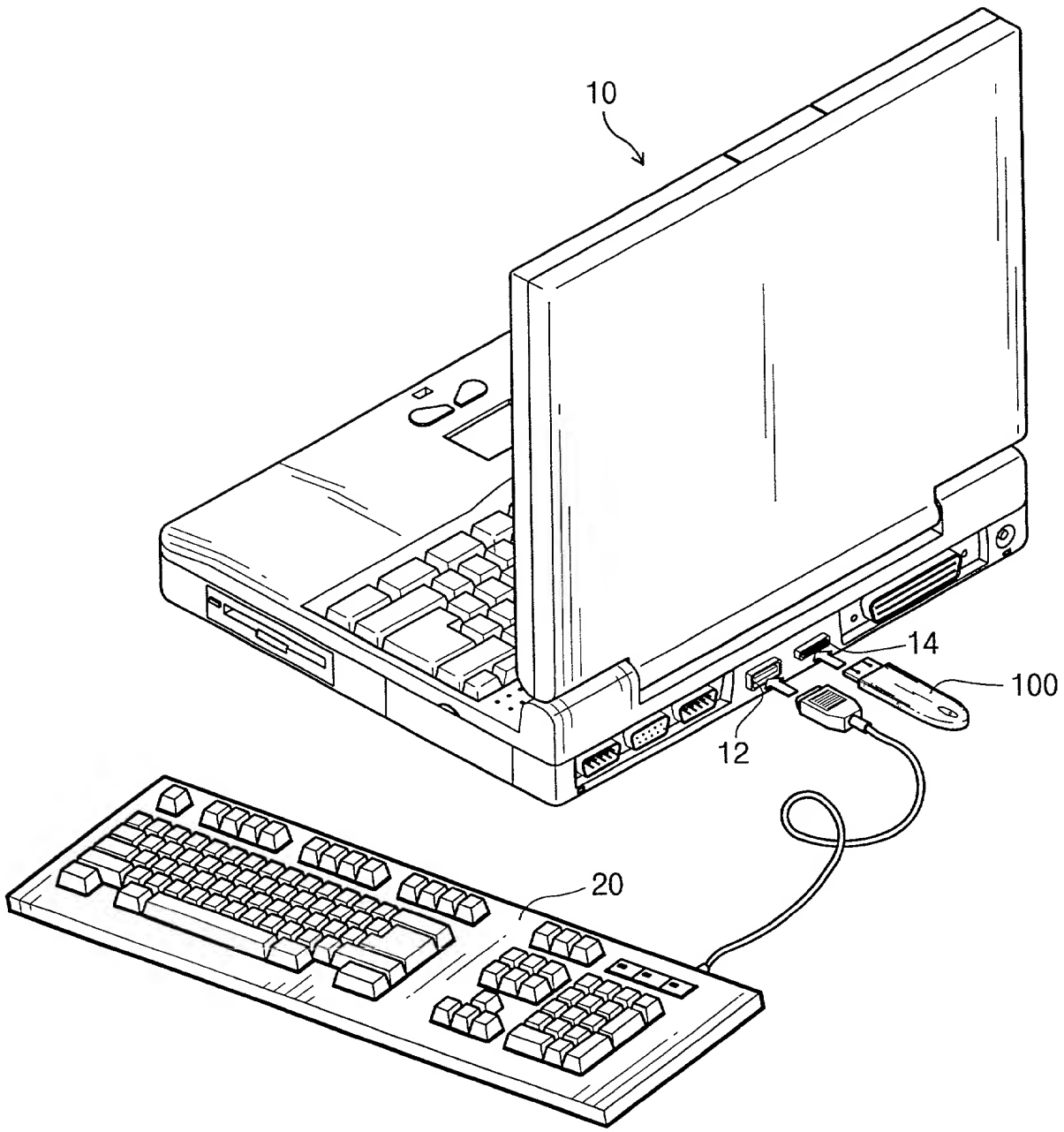


Fig. 4A

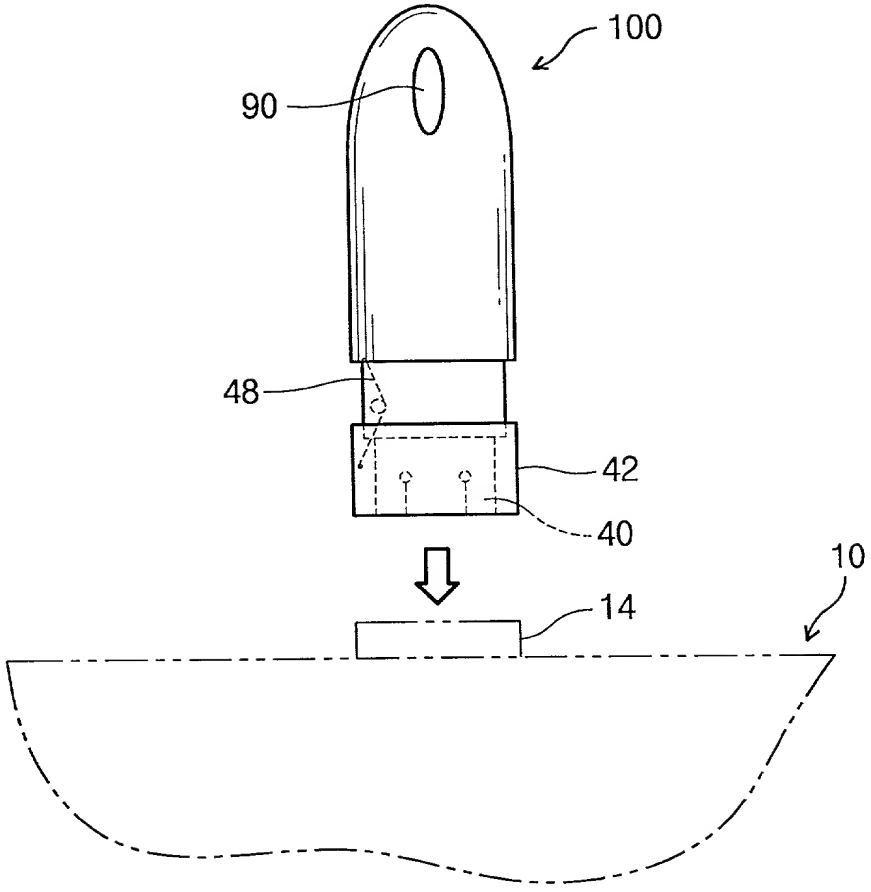


Fig. 4B

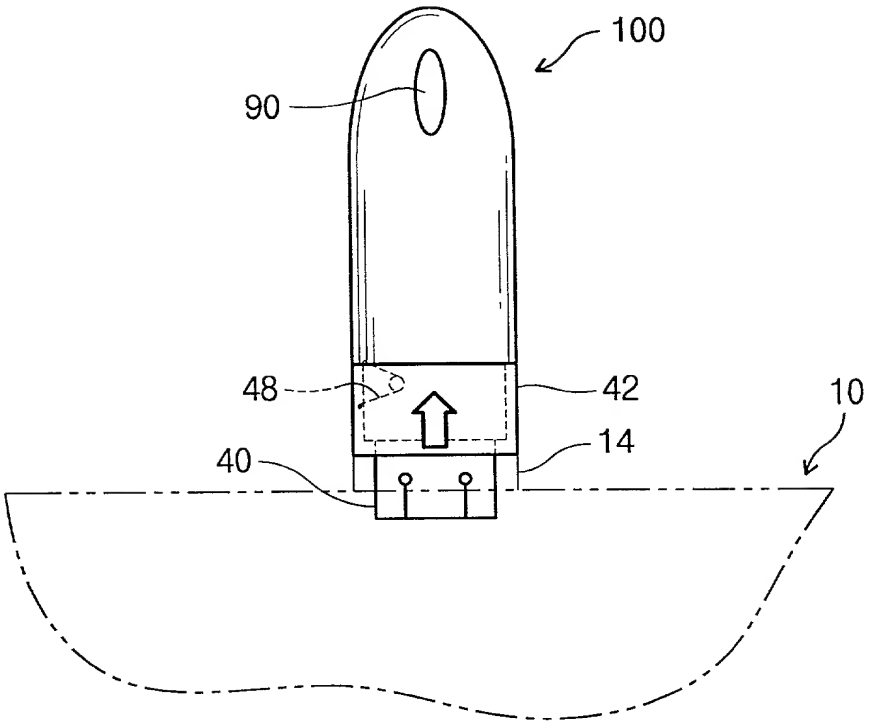


Fig. 5

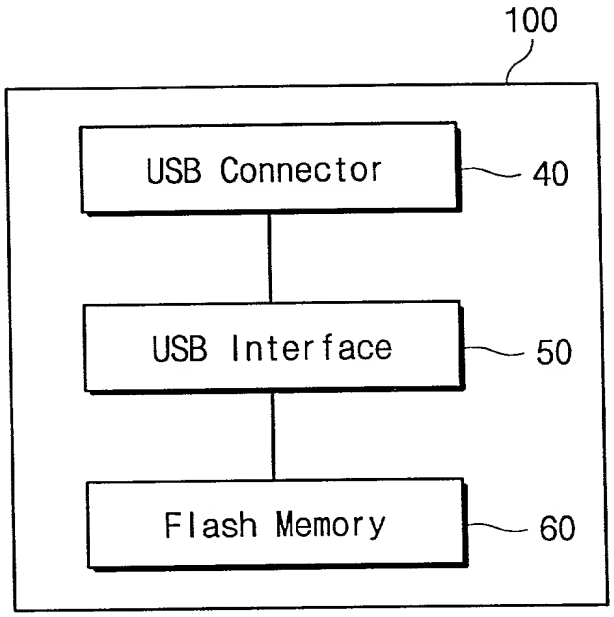


Fig. 6

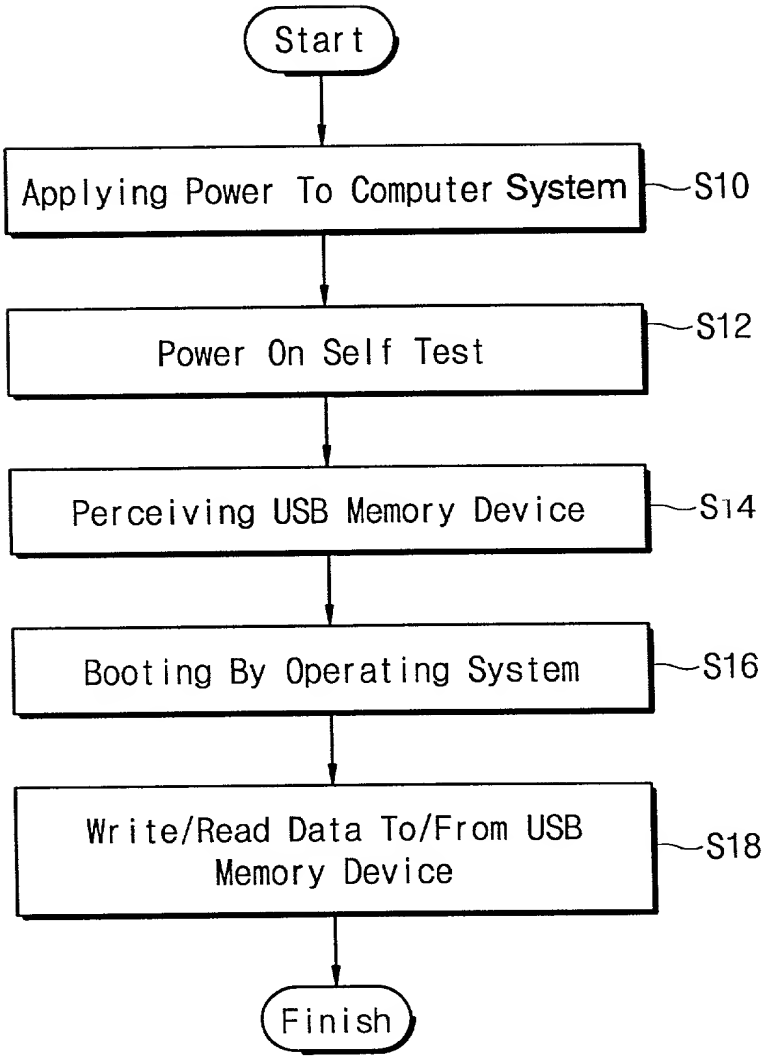
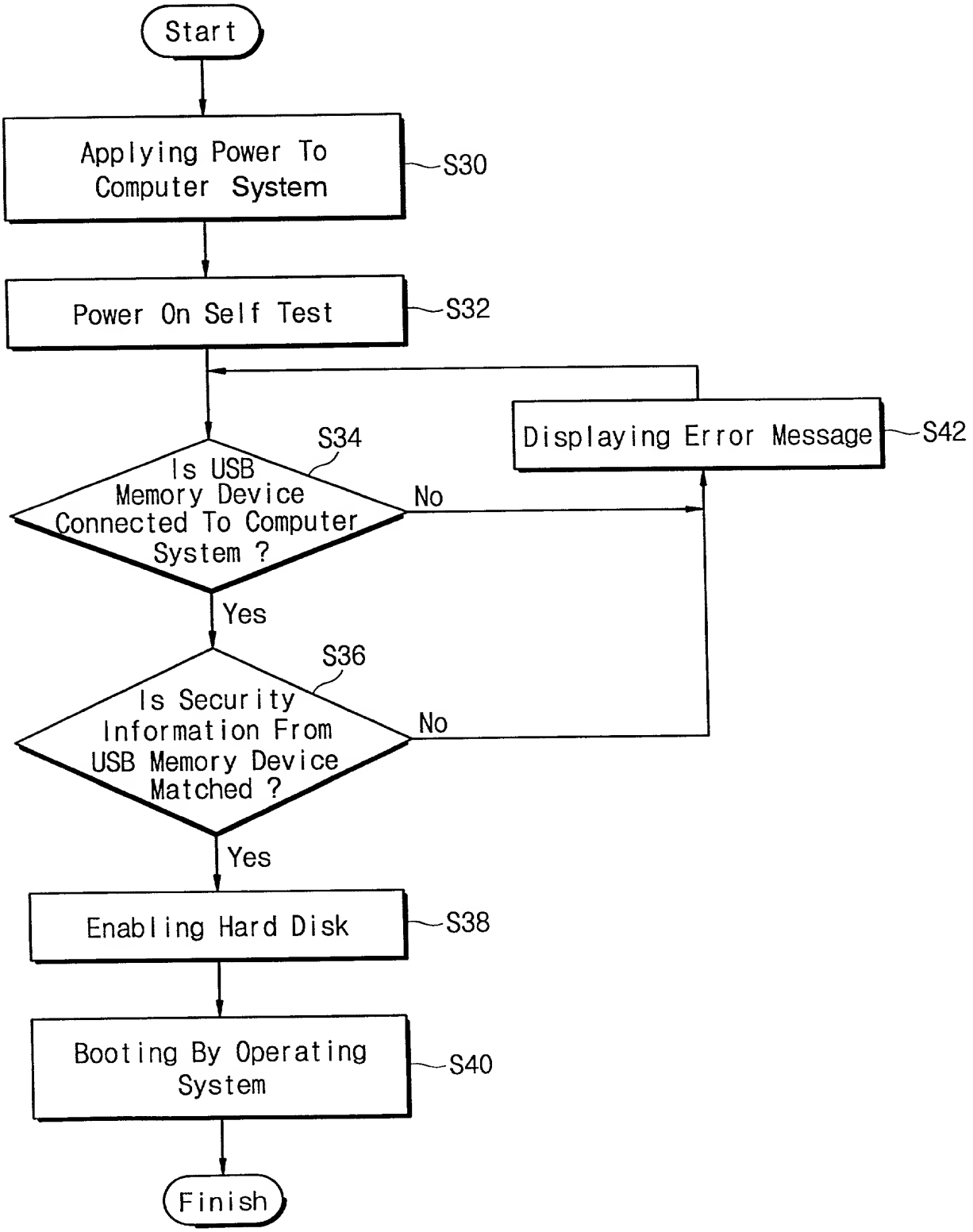

Start
Applying Power To Computer System
S10
Power On Self Test
S12
Perceiving USB Memory Device
S14
Booting By Operating System
S16
Write/Read Data To/From USB Memory Device
S18
Finish

Fig. 7


Start
Applying Power To Computer System
S30
Power On Self Test
S32
S34
Is USB Memory Device Connected To Computer System ?
No
Displaying Error Message
S42
Yes
S36
Is Security Information From USB Memory Device Matched ?
No
Yes
Enabling Hard Disk
S38
Booting By Operating System
S40
Finish

PATENT
P56181

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Ju-Heon LEE

Serial No.:	*To be assigned*	Examiner:	*To be assigned*
Filed:	11 October 2000	Art Unit:	*To be assigned*

For: PORTABLE INTEGRATED CIRCUIT MEMORY DEVICE FOR USE WITH UNIVERSAL SERIAL BUS

TRANSMITTAL OF DECLARATION

Assistant Commissioner
for Patents
Washington, D.C. 20231

Sir:

This transmittal accompanies the original Declaration for the above-referenced application.

Respectfully submitted,

Robert E. Bushnell,
Attorney for the Applicant
Registration No.: 27,774

Suite 300, 1522 "K" Street, N.W.
Washington, D.C. 20005-1202
(202) 408-9040

Folio: P56181
Date: 10/11/00
I.D.: REB/nah

PTO/SB/01 (6/95)

DECLARATION

Docket No. P56181

AS A BELOW NAMED INVENTOR, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe that I am the original, first and sole (*if only one name is listed below*) or an original, first and joint inventor (*if plural names are listed below*) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE: PORTABLE INTEGRATED CIRCUIT MEMORY DEVICE FOR USE WITH UNIVERSAL SERIAL BUS

the specification of which either is attached hereto or otherwise accompanies this Declaration, or:

☐ was filed in the U.S. Patent & Trademark Office on _____ and assigned Serial No. _____.

☐ and (*if applicable*) was amended on _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37 of the Code of Federal Regulations §1.56. I hereby claim foreign priority benefits under Title 35, U.S. Code §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, or §119(e) of any United States provisional application(s), listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

(Application Number)	(Country)	(Day/Month/Year filed)	Priority Claimed
33872/1999	Republic of Korea	11 October 1999	Yes [X] No [ ]
			Yes [ ] No [ ]

I hereby claim the benefit under Title 35, U.S. Code, §120, of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, The Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.)	(Filing Date)	(STATUS: patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(STATUS: patented, pending, abandoned)

I hereby revoke all previously granted powers of attorney and appoint the following attorneys: Robert E. Bushnell, Reg. No. 27,774, Michael D. Parker, Reg. No. 34,973, and Darren R. Crew, Reg. No. 37,806, to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of appointment and with full power to substitute an associate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to:

Robert E. Bushnell,
Attorney-at-Law
Suite 300, 1522 "K" Street, N.W.
Washington, D.C. 20005-1202

Payor No. 008439
Area Code: 202 408 9040

I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF FIRST OR SOLE INVENTOR: JU-HEON LEE — Citizenship: Republic of Korea

Inventor's signature: _____ Date: 2000 / 10 / 11

Residence & Post Office Address: 204-1003 Samsung Apt., Yuljeon-dong, Jangahn-ku, Suwon, Kyunggi-do, Republic of Korea

FULL NAME OF SECOND JOINT INVENTOR: _____ Citizenship: _____

Inventor's signature: _____ Date: _____

Residence & Post Office Address:

FULL NAME OF THIRD JOINT INVENTOR: _____ Citizenship: _____

Inventor's signature: _____ Date: _____

Residence & Post Office Address:

FULL NAME OF FOURTH JOINT INVENTOR: _____ Citizenship: _____

Inventor's signature: _____ Date: _____

Residence & Post Office Address:

☐ Additional inventors are being named on separately numbered sheets attached hereto.

PTO/SB/01 (6/95)

DECLARATION

Docket No. P56181

AS A BELOW NAMED INVENTOR, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe that I am the original, first and sole (*if only one name is listed below*), or an original, first and joint inventor (*if plural names are listed below*), of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE: *PORTABLE INTEGRATED CIRCUIT MEMORY DEVICE FOR USE WITH UNIVERSAL SERIAL BUS*

the specification of which either is attached hereto or otherwise accompanies this Declaration, or:

☐ was filed in the U.S. Patent & Trademark Office on _____ and assigned Serial No._____,

☐ and (*if applicable*) was amended on _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37 of the Code of Federal Regulations §1.56. I hereby claim foreign priority benefits under Title 35, U.S. Code §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, or §119(e) of any United States provisional application(s), listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

			Priority Claimed:
43872/1999	Republic of Korea	11 October 1999	Yes [X] No [ ]
(Application Number)	*(Country)*	*(Day/Month/Year filed)*	
			Yes [ ] No [ ]
(Application Number)	*(Country)*	*(Day/Month/Year filed)*	

I hereby claim the benefit under Title 35, U.S. Code, §120, of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, The Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	*(Filing Date)*	*(STATUS. patented, pending, abandoned)*
(Application Serial No.)	(Filing Date)	(STATUS: patented, pending, abandoned)

I hereby revoke all previously granted powers of attorney and appoint the following attorneys: Robert E. Bushnell, Reg. No. 27,774, Michael D. Parker, Reg. No. 34,973, and Darren R. Crew, Reg. No. 37,806, to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of appointment and with full power to substitute an associate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to:

Robert E. Bushnell,
Attorney-at-Law
Suite 300, 1522 "K" Street, N.W. **Payor No. 008439**
Washington, D.C. 20005-1202 Area Code: 202-408-9040

I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF FIRST OR SOLE INVENTOR: JU-HEON LEE Citizenship: Republic of Korea

Inventor's signature: _____ Date: _____
Residence & Post Office Address: 204-1603 Samsung Apt., Yuljeon-dong, Jangahn-ku, Suwon, Kyunggi-do, Republic of Korea

FULL NAME OF SECOND JOINT INVENTOR: _____ Citizenship: _____

Inventor's signature: _____ Date: _____
Residence & Post Office Address:

FULL NAME OF THIRD JOINT INVENTOR: _____ Citizenship: _____

Inventor's signature: _____ Date: _____
Residence & Post Office Address:

FULL NAME OF FOURTH JOINT INVENTOR: _____ Citizenship: _____

Inventor's signature: _____ Date: _____
Residence & Post Office Address:

☐ Additional inventors are being named on separately numbered sheets attached hereto.